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ABSTRACT

Two contingency systems, individual and group, were evaluated for their effects on children's behavior during small group meetings. A group of 48 children, ages 8-14, attended a seven-week residential camp program operated on a token economy system. Ratings of the campers' behavior were made by the counselors on a five-point rating scale at the conclusion of the daily meetings. Each camper received both contingency programs, in counterbalanced order. Data were gathered during baseline, two feedback and two treatment phases. An analysis of variance for repeated measures was performed on the mean weekly camper scores. Both systems were equally effective in significantly increasing the amount of desirable behavior, and there was no effect on behavior due to feedback alone. The importance of subject characteristics for the group contingency system was verified. The results are discussed in terms of advantages and disadvantages of each type of contingency system, and recommendations are made regarding the appropriate use of each type of system with specified populations and settings. (Author)

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Behavior Change in Children at a Therapeutic Summer Camp as a Function of Feedback, Individual Versus Group Contingencies, and Subject Characteristics

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Running Head: Individual Versus Group Contingencies

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and Subject Characteristics

Therapeutic residential camps have been utilized increasingly frequently over the past several decades, and have been found to be viable adjunctive or primary treatment settings (Hallowitz, 1950; Harms, 1947; Rickard & Dinoff, 1965; 1971). One of the treatment modalities in use in such an environment is often a contingency management system (Lattal, 1969; Rickard & Saunders, 1971).

Individual and group contingency systems have been employed in token economy paradigms for a number of years. The individually programmed management system was utilized first, and has been effective with such diverse populations as retarded persons (Hunt, Fitzhugh & Fitzhugh, 1968), delinquents (Phillips, 1968), and autistic children (Lovaas, Freitag, Gold & Kassorla, 1975), in settings such as the hospital (Ayllon & Azrin, 1968), school (O'Leary & Drabman, 1971), and at home (Allen & Harris, 1966).

Within the last ten years, group behavior management systems have been implemented as a more economical means for modifying behavior (Sulzbacher & Houser, 1973). These programs have also been shown to function effectively with varying populations, and have been most frequently utilized with children in classroom settings (Hayes, 1976).

Since the early 1970's, investigators have begun to compare the effectiveness of the individual and group contingency systems. Few

comparative studies are available, and to date the results have been somewhat equivocal. It is not clear by simply comparing the results which system is more effective in modifying behavior. For example, in a 1975 review by Litow and Pumroy of 14 studies conducted in classrooms, seven found no differences, six showed the group system to be more effective, and one found the individual contingency program to be more effective.

The results of the comparative investigations conducted in settings other than the classroom have also been inconclusive. One reason for this lack of clear cut evidence appears to be the great diversity in the studies with regard to methodology, target behaviors, subject populations and physical environments. Studies conducted utilized classes of environments ranging from non-treatment settings (e.g., regular public school classrooms) to treatment settings, with subjects on a continuum ranging from non-clinical (e.g., "normal" school children) to clinical populations, with gradations in between. Additionally, the targeted behaviors have varied considerably, (e.g., response cost procedures vs. reinforcement for appropriate behavior). These categories will be useful in organizing and clarifying the results of the comparative investigations.

To briefly summarize, beginning on one end of the continuum (see Table 1), in a public school classroom with normal children, two studies

Insert Table 1 about here

with disruptive behavior targeted found no difference between the two types of contingency systems (Drabman, Spitalnik & Spitalnik, 1974; Grandy, Madsen & DeMersseman, 1973). In the same setting two investigations found the group contingency system to be more effective with academic and/or cooperative behaviors (Hamblin, Hathaway & Wodarski, 1974; Wodarski, Hamblin, Buckholdt & Ferritor, 1972). Moving toward a more "clinical" population--disruptive children in a public school classroom--both Herman and Tramontana (1971) and Long and Williams (1973) found that differences between the two contingency systems were minimal with respect to decreasing the frequency of disruptive behavior, though Long and Williams reported the group contingency system to be slightly more effective.

Children who are considered to be a clinical population in special public school classrooms would be another gradation along the continuum. Both investigations conducted in such a setting reported the group and individual contingency systems to be equally effective in reducing disruptive behaviors (Axelrod, 1973; Ellery, Blampied & Black, 1975).

At the far end of the continuum is a clinical population in a treatment setting; one study found an individual contingency to be more effective with routine work tasks (Phillips, Phillips, Wolf & Fixsen, 1973), the other found group contingencies to be more effective in both parts of the study, both increasing desirable behavior and decreasing inappropriate behavior (Alexander, Corbett & Smigel, 1976).

It might be expected then that in a treatment setting a group contingency would be the behavior management system of choice when disruptive or deficit behaviors are targeted. However, Hayes (1976) in a review of the use of group contingencies stated that situational factors are the most important consideration in determining whether group contingencies are appropriate. She emphasized the importance of subject characteristics and peer interaction patterns as they are related to group contingency effectiveness.

The purpose of the present study was twofold: 1) to compare the effectiveness of group versus individual contingency systems utilizing a clinical population in a treatment setting; 2) to investigate the role of subject characteristics and peer interaction patterns in the effectiveness of the group contingency system. Additionally, one component of the token system was examined, with points alone functioning as feedback, then back-up reinforcers added. It has been hypothesized that the feedback provided when the implementor in a token program describes the appropriateness or inappropriateness of behavior may also be a critical variable in the reduction of disruptive behavior (Kazdin, 1973; O'Leary & Drabman, 1971).

Method

Setting and Subjects

A therapeutic summer camp operated by a state Department of Mental Health was the treatment environment. The camp served 48 children, 16 girls and 32 boys, who were referred to the seven-week program for mild to moderate behavior problems; the total population of the camp was

included in the study. None of the children was severely disturbed or retarded; the majority of the campers exhibited behavior deficits in the area of social skills. Each camper was assigned to a cabin group consisting of three counselors and seven same-sex peers of approximately the same age. While the cabin group functioned as a unit, each counselor had primary responsibility for two or three campers in the group.

Therapeutic Program

The method which was employed at the camp as a means of teaching campers appropriate social skills and other alternative forms of behavior was a contingency management system. It was very similar to token economies described in the literature (Kazdin & Bootzin, 1972; O'Leary & Drabman, 1971), the major difference being that tangible tokens were not employed with the individual point system. Throughout the day the campers worked on the individual behaviors for which they earned points, while they took part in activities with their groups. Two contingency systems were operating, one for the individual, and one for the cabin group. The points were exchangeable for small items such as candy or fruit at a nightly "mini-canteen."

Once a day, after the evening meal, "token meetings" were held. During the token meeting the campers met with their counselors in groups of two or three to discuss the day, review their progress, total their points and contract for the behaviors on which they would be working the following day. The experimental manipulation was restricted to the

token meeting, and did not alter the regular individual and group points and back-up reinforcers.

A small sample of behavior, that during token meeting, was chosen to demonstrate and evaluate the effect of applying contingencies to specific behaviors. The token meetings were selected for intervention for several reasons, the major reason being that improved behavior during the token meetings was thought to be beneficial to the program and to the campers. More appropriate camper behavior during the meeting would increase the likelihood that the meetings would be productive and constructive group discussion and problem-solving sessions. The token meetings could also be considered a microcosm of peer interactions, and thus be a time during which the campers could acquire and expand their repertoire of social skills. In addition, the requisite token meeting behaviors were felt to be somewhat analogous to the requirements of a small, self-contained classroom; the campers would therefore be learning behaviors that would generalize to situations they might encounter away from the camp setting.

Measures

Dependent variable. A five-point rating scale, the token meeting behavior card (TMB card), was devised to measure the behavior termed "good token meeting behavior." It ranged from a score of zero, indicating that the camper was actively disruptive, through five, reflecting active participation (see Figures 1 and 2). The definitions

Insert Figures 1 and 2 about here

of the behaviors are as follows:

1. Stays close to the group: remains close enough to counselor to be within range of normal conversational tone of voice; approximately three to six feet;
2. Looks at person talking: maintains eye contact with or directs gaze toward person talking;
3. Doesn't interrupt: does not make noise nor initiate speech while another person is talking;
4. Answers questions: responds to questions directed to him within ten seconds;
5. Gives at least three unprompted relevant suggestions: spontaneously makes suggestions or volunteers information pertaining to the current topic of discussion.

The counselors rated each camper's behavior at the conclusion of the token meeting, and informed the campers of the score they had earned. The TMB cards, indicating the scores, were turned in each evening.

Each of the five behaviors specified as appropriate token meeting behavior was rated as having been passed or failed. The five behaviors chosen constitute graduated criteria, and were arranged in ascending order of appropriateness and level of participation. Each behavior

passed was worth a score of one, and it was required that the behaviors be passed sequentially in order to earn credit for meeting the criteria. Thus, the first two behaviors must be passed before credit for the third one could be earned. Behaviors that were passed were totaled until one was failed. A score of three, for example, indicated that at least the first three behaviors were rated as passed. The scores used in the analysis were the scores the camper earned during each treatment condition, though the scores that were recorded during the group conditions were the basis for reinforcement. Scores "earned" and scores "recorded" are discussed in the Procedures section.

Reliability. During the staff training week, the counselors were trained through observation and practice with role-playing situations to rate the token meeting behavior. The ratings were discussed and practiced until the agreement among the staff members was 75% or better. As recommended by Taplin and Reid (1973), a random spot check procedure was employed to check reliability, as agreement and accuracy have been found to deteriorate over time. In order to avoid the problems of observer bias (Reid, 1970), it was planned that the nurse rather than the Assistant Directors, who were not blind to the treatment conditions, would serve as the primary reliability assessor of the camper scores given by the counselors. This proved to be unfeasible, so the nurse and the three Assistant Directors checked the counselors on a random schedule, with the nurse checking each counselor at least twice during the seven weeks. Each Assistant Director assessed each of her seven counselors approximately once a week to check the reliability of the camper TMB

ratings. Observer agreement was calculated using a Pearson correlation as recommended by Johnson and Bolstad (1973) due to the limited number of reliability checks relative to the total amount of data ($r = .66$).

Procedure

A modified ABAB design was employed (OABAB), with the sequence of treatment conditions counterbalanced. The design is illustrated in Table 2. Each of the 48 campers was assigned to a treatment group

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Insert Table 2 about here

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through assignment to a token meeting group. "Token meeting groups" consisted of one counselor and two or three campers. Within each of the six cabins there were three token meeting groups, for a total of 18. Each camper was placed in a counselor's token meeting group, and each token meeting group was randomly assigned to one of the two treatment groups, with the restriction that there be equal numbers of two- and three-person token meeting groups allotted to each treatment group. This put a total of nine token meeting groups (24 campers) in each of the two treatment groups. Group 1 received treatment sequence 1: individual, then group contingencies. Group 2 received treatment sequence 2: group, then individual contingencies.

Baseline. (6 days) During the first six days of camp, each camper's behavior during the token meeting was rated by the counselor, and the camper was assigned a "score" based on these ratings. No

mention of the score was made to the campers at this time. (A "score" was earned by the campers rather than points, to avoid possible confusion with the points being earned individually throughout the day.)

Phase One. (7 days) During this phase, the experimental manipulation (a score contingent upon token meeting behavior) was in effect. A second baseline was taken to assess the effects on behavior of a score functioning only as feedback, without back-up reinforcers. The counselor rated the camper's behavior on the TMB cards.

Phase Two. (13 days) During this first treatment phase not only was the camper given feedback on the score, but the score was also backed up by reinforcement. The campers were informed that in order to gain access to a nightly special canteen, they were required to earn a three or higher on their TMB card. A score of three was chosen since it was felt that the behaviors which constitute the criteria for a three were the minimal acceptable behaviors for a productive token meeting. Two types of reinforcement systems were employed, and these two levels of treatment variable were counterbalanced to attenuate sequence effects.

One level of the treatment variable was an individual contingency system, and the other was a group contingency system. For the individual contingency, each camper received admission to the special canteen based upon the score that was earned individually. With the group contingency, every camper was required to earn a three or above in order to gain access to the special canteen. If any member

of the group received less than a three, all of the group members received the lowest score. For example, with the group contingency, if Will earned a two, John a one, and Henry a four, the score that would be recorded for all three of the campers would be a one. Thus, none of the three campers would be allowed access to the special canteen that evening. The lowest score was chosen to be recorded because it was shown (Wodarski et al., 1972) that making reinforcement contingent upon the lowest score increased cooperative behavior more than making it contingent upon an average group score, or the highest score. The campers were aware that they were in different groups, since the TMB cards were different colors.

During the periods when the special canteen was offered, it was held every night after token meeting, at the same time as the mini-canteen. Ice cream bars were chosen for the special canteen since they seemed to have high "inherent" reinforcing value. To increase the value, they were not made available to the campers at any other time. Apples were provided as an alternate choice for those campers who were on diets, and also were not available during the mini-canteen.

Phase Three. (7 days) During this reversal phase the score again functioned as feedback without the back-up reinforcers of the special canteen. At the end of the token meeting, the scores were recorded and the campers were informed of their score. The only information given to the campers at the beginning of this phase was the fact that there would be no special canteen for a while.

Phase Four. (13 days) The individual and group contingencies went back into effect, with the groups switching contingencies. These contingencies remained in effect until the end of camp.

The changing conditions were communicated to the counselors by leaving on their beds a written explanation of the condition and the instructions for their token meeting group. During token meeting that evening, the new conditions and instructions were explained to the campers by the counselors. In order to deal with any questions or problems, the experimenter checked and collected the TMB cards on the first several days after the conditions had changed. A wall chart was also put up in the dining hall specifying the dates and conditions, and listing which counselors were using which color card during the particular condition in operation.

Results

Figure 3 shows the data for both groups under all experimental

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Insert Figure 3 about here

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conditions. An analysis of variance for repeated measures was performed on the mean scores for each week (see Table 3) and revealed a very

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Insert Table 3 about here

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significant main effect of the treatment (i.e., application of reinforcement contingencies) over the seven weeks, $F(6,276) = 28.04$, $p < .0001$.

Another analysis of variance for repeated measures was performed on the mean scores for each group for each week, and yielded no effect due to treatment group, $F(1,46) = 1.05$, $p > .31$. Additionally, there was no treatment group by week interaction $F(6,276) = 0.85$, $p > .53$, indicating that the two groups paralleled each other in their patterns of behavior change.

Since there was no difference between the different reinforcement conditions, the scores of the campers were collapsed across treatment groups and several additional analyses were performed. A multivariate statistic, Hotelling's T^2, was used to evaluate differences between phases across all subjects. This procedure is recommended by Timm (1975) as an appropriate procedure for repeated measures data.

Comparing the baseline weeks (Table 4), there was no difference

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Insert Table 4 about here

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between the first week and Phase 1, indicating that feedback alone had no effect on the campers' scores. However, there was a significant difference between the two feedback weeks (Phase 1 and 3). $T^2(1,46) = 6.53$, $p < .05$. This indicates that the scores in the reversal (Phase 3) did not return to the feedback baseline (Phase 1) even though the conditions were the same in both weeks.

As can be seen from Table 4, significant differences were found between the feedback baseline phase and the first treatment phase,

between the first treatment phase and the reversal, and between the reversal and the second treatment phase. These significant differences indicate that the campers' behavior was under the control of the reinforcement contingencies, and that the intervention was effective in producing behavior change. In addition, there was also a significant difference between the first treatment phase and second treatment phase, reflecting the fact that the campers' behavior continued to improve over the entire camp session.

Discussion

The results of the present study indicate that the application of reinforcement contingencies was highly effective in producing increased levels of appropriate behavior during small group meetings. There were no differences in effectiveness between the two types of contingency systems; however, the importance of peer interactions in the group contingency system was verified, and will be discussed later. Specification of appropriate behavior and feedback regarding that behavior were not sufficient to produce behavior change.

Control over behavior was demonstrated in spite of the fact that the reversal scores did not return to baseline. While this might be due to a reversal phase which was too short to show a complete reversal, the failure to return to baseline is not an infrequent occurrence in contingency management systems. As discussed by O'Leary and Drabman (1971), a problem with ABAB designs in naturalistic settings is the low probability

of obtaining a precise return to baseline once an experimental program has been put into effect. Often it is clinically undesirable to return to baseline behavior, or it may be impossible for the behavior modifiers to return to their original behavior.

The finding of no difference in effectiveness between individual and group contingencies is consistent with the classroom studies, but not with reports from treatment settings with clinical populations. One possible explanation for the discrepant results concerns the size of the group that was utilized. Most of the studies reviewed employed groups ranging in size from seven to thirty children, thus it is not known whether the groups in the present study composed of only two or three members would actually function as a "group" in relation to the group contingent reinforcement. It is questionable whether the groups were sufficiently large to have peer influence operating to the extent that it substantially affected behavior. This question remains to be investigated empirically.

Another possible explanation for the inconsistency in results from the same setting is that the environments may actually be rather dissimilar. With the therapeutic program integrated into the routine of recreation and daily living, the camp environment is unlikely to be similar to the setting of a traditional treatment institution. While there is an emphasis on changing behavior at the camp, the atmosphere is much less controlled and restrictive than other residential placements

might be. Due to the contradictory results obtained by Alexander et al. (1976) and the present investigation, it seems clear that no definitive statements can be made regarding the differential effectiveness of individual and group contingencies in a treatment setting, and more research related to that question remains to be completed.

A second purpose of the study was to investigate the appropriateness of certain types of contingency systems, especially group systems, based upon criteria other than effectiveness. Other parameters considered were use of the peer group and subject characteristics.

Utilization of the peer group is one reason that a choice of the group contingency has been made. While positive results using peer influence have been reported (Alexander et al. 1976; Graubard, 1969; Wodarski et al., 1972), some authors have expressed reservations regarding the use of group contingencies, especially in reference to certain subject characteristics. O'Leary and Drabman (1971) suggested caution when initiating the use of group contingencies due to a) the possibility that persons in the group may not have the requisite behavior(s) in their repertoire, b) the resulting possibility of undue pressure being placed upon that individual, and c) the possibility that some members of a group might find it reinforcing to "beat the system" and/or "sabotage" the program to prevent other members from obtaining reinforcement.

Other undesirable effects related to subject characteristics which have been noted with the use of group contingent systems were negative verbalizations. Axelrod (1973) reported a large number of verbal threats

occuring with the group contingency, while none were reported with the individual system. As Hayes (1976) suggested, if some of the peer interaction with the group contingency can be attributed to threatening exchanges, then the utility of that system is limited, and probably should not be instituted in a situation in which the predominant form of interaction is already negative.

In the present study the importance of subject characteristics and peer interaction patterns was verified. Anecdotal evidence exists for a fair number of verbal threats made during the group contingency, and for the occurrence of somewhat frequent "sabotage" in which a group member verbalized purposely not meeting the criterion level. The prompts that resulted in such cases were more often threats and the peer influence more frequently took the form of pressure than anything which could be considered positive. The occurrence of negative interactions is not surprising given the referral behaviors of many of the campers, most of whom had been labeled behavior-disordered. Many of their backgrounds and/or most familiar environments might be considered predominantly negative.

In light of the evidence presented and discussed, some recommendations for the use of individual or group contingencies in certain settings with specific populations could be made. While individual and group contingencies are reported to be equally effective in a majority of studies conducted in classrooms, it appears that the preferred reinforcement contingency in a normal public school classroom would be a group

contingency. In such a classroom, it would be possible to utilize advantages of that system such as ease of administration, cost efficiency, use of the peer group (Litow & Pumroy, 1975), and enhancement of cooperative and academic behaviors (Hamblin et al., 1974; Wodarski et al, 1972). However, a cautionary note is necessary to emphasize subject characteristics. It would be important to consider the prevailing tone--positive or negative--of the social interactions.

The recommendations regarding more "clinical" populations and treatment environments are less clear cut. It is thought that a group contingency would not be the best choice in such a setting, due to aversive systems which are frequently in operation, whether overtly or covertly. In spite of the fact that Alexander et al. (1976) obtained the best results under the group contingency, it is questionable to what extent the social interactions among the adolescents were positive. It was stated that "spontaneous peer pressure was noted by staff members during the daily group meetings in the form of verbal admonitions," (p. 233), and that "the girls did not physically harm a curfew violator, but were firm in accepting no excuses and demanding future punctuality" (p. 224). However, these kinds of coercive patterns are often the very behaviors which are targeted in attempts to teach more positive interactions. It would seem that employing an individual contingency system in any situation in which the interaction is often negative would be most likely to lead to an increase in the amount and frequency of positive interactions and desirable behavior. It does not make sense to utilize

a group contingency system, which fosters coercive interactions, unless the participants are being specifically taught alternatives to such negative interaction patterns. Further investigations need to be conducted in treatment settings before an answer is obtained to the question of which contingency system, individual or group, is more effective and/or appropriate; in these investigations an important aspect to monitor would be the quality of the social interactions.

With regard to future studies comparing the effectiveness of individual and group contingency systems, there clearly are important variables which remain to be examined in more detail. Perhaps organizing studies in terms of settings, populations, target behaviors and subject characteristics will be a useful way to begin investigating those factors more systematically, in order to identify the specific variables which produce the important similarities and differences in results.

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Footnotes

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TABLE 1

Summary of Comparison Studies: Individual vs. Group

Non-Treatment Setting Public School Classroom Normal Population	Non-Treatment Setting Public School Classroom Disruptive Students	Treatment Setting Special Classroom Disruptive Students	Treatment Setting Residential Program Clinical Population
Disruptive Behavior: Equally Effective Drabman, Spitalnik & Spitalnik (1974) Grandy, Madsen & DeMersseman (1973) Cooperative Behavior: Group More Effective Hamblin, Hathaway & Wodarski (1974) Wodarski, Hamblin, Buckholdt & Ferritor (1972)	Disruptive Behavior: Equally Effective Herman & Tramontana (1971) Long & Williams (1973)	Disruptive Behavior: Equally Effective Axelrod (1973) Ellery, Blampied & Black (1975)	Disruptive Behavior: Group More Effective Alexander, Corbett & Smigel (1976) Work Behavior: Individual More Effective Phillips, Phillips, Wolf & Fixsen (1973)

TABLE 2

MODIFIED OABAB DESIGN

	O	A	B	A	B
Group 1: N=24	baseline	baseline for "score" as feedback	Treatment I individual contingencies	reversal to score as feedback	Treatment G group contingencies
	6 days	7 days	13 days	7 days	13 days
Group 2: N=24	baseline	baseline for "score" as feedback	Treatment G group contingencies	reversal to score as feedback	Treatment I individual contingencies
	6 days	7 days	13 days	7 days	13 days

TABLE 3

Analysis of Variance for Treatment Group and Treatment Week

SOURCE	MS	DF	F
GROUP	2.449	1	1.05
SUBJ (GROUP)		46	
WEEK	15.303	6	28.04*
GROUP BY WEEK	0.464	6	0.85
WEEK BY SUBJ (GROUP)		276	

* $p < .0001$

TABLE 4

Analysis of Differences between Experimental Phases

Effects	Hotellings T^2
Baseline vs. Phase 1 (feedback)	0.72
Phase 1 (feedback) vs. Phase 3 (reversal to feedback)	6.53*
Phase 1 (feedback) vs. Phase 2 (treatment)	48.60**
Phase 2 (treatment) vs. Phase 3 (reversal)	21.07**
Phase 3 (reversal) vs. Phase 4 (treatment)	38.11**
Phase 2 (treatment) vs. Phase 4 (treatment)	5.70*

* $p < .05$

** $p < .01$

MEAN CAMPER SCORE FOR EACH WEEK

	Mean	S.D.
Week 1	2.41	1.20
Week 2	2.55	1.11
Week 3	3.43	0.77
Week 4	3.65	0.75
Week 5	2.95	0.94
Week 6	3.80	0.65
Week 7	3.63	0.66

Figure Captions

Figure 1. Rating card for group contingency system

Figure 2. Rating card for individual contingency system

Figure 3. Mean scores for each group for each week of camp

REMEMBER TO CATCH THEM BEING GOOD
GOOD TOKEN MEETING BEHAVIOR RATING SCALE

Camper's Name: _____

		Pass	Fail	Pass	Fail	Pass	Fail
A.	Stays close to group all the time						
B.	Looks at person talking more than half the time						
C.	Does not interrupt person talking more than twice						
D.	Answers all questions about self or others						
E.	Gives at least three unprompted relevant suggestions						
	Score Earned:			_____		_____	
	Score Recorded:			_____		_____	

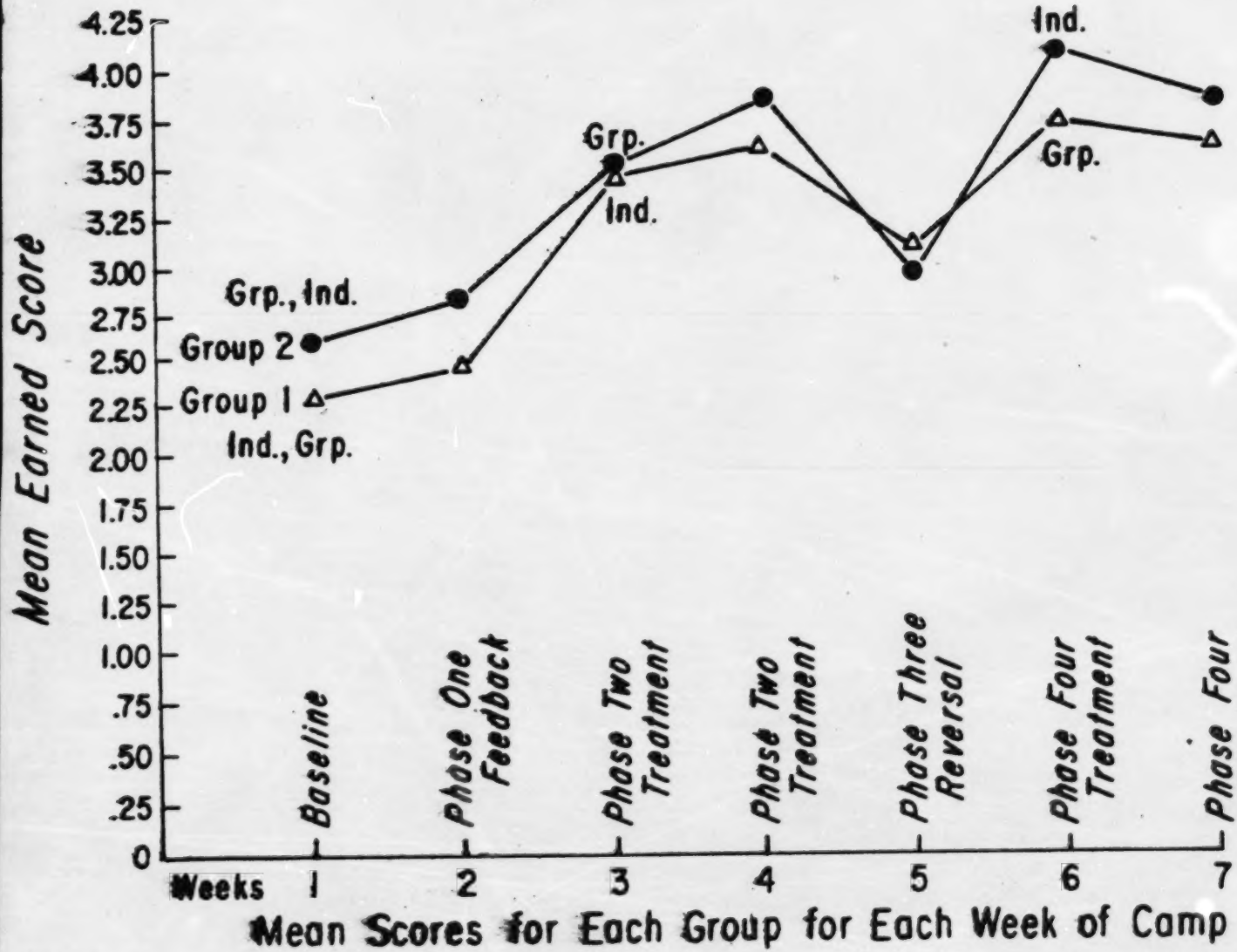
Counselor: _____

REMEMBER TO CATCH THEM BEING GOOD
GOOD TOKEN MEETING BEHAVIOR RATING SCALE

Camper's Name: _____

		Pass	Fail	Pass	Fail	Pass	Fail
A.	Stays close to group all the time						
B.	Looks at person talking more than half the time						
C.	Does not interrupt person talking more than twice						
D.	Answers all questions about self or others						
E.	Gives at least three unprompted relevant suggestions						
	Score Earned:	_____		_____		_____	

Counselor: _____



Mean Scores for Each Group for Each Week of Camp